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EXAMINER

RAO, ANAND SHASHIKANT

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 04/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/470,299

Applicant(s)

YEO ET AL.

Examiner

Andy S. Rao

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11-17 and 19-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,11-17 and 19-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Amendment

1. Applicant's arguments with respect to claims 1, 3-9, 11-17, and 19-24. have been considered but are moot in view of the new ground(s) of rejection.
2. Claims 2, 10, and 18 have been canceled in accordance with the instructions filed on 2/6/02 as in Paper 7.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-9, 11-17, and 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrew et al., (hereinafter referred to as "Andrew") in view of Akiwumi-Assani et al., (hereinafter referred to as "Akiwumi-Assani").

Andrew discloses a method for decoding compressed video (Andrew: column 5, lines 10-15), comprising: reading a stream of compressed video into a memory (Andrew: column 6, lines 54-66), said video having multiple pictures, each picture having one or more independent elements (Andrew: column (Andrew: column 8, lines 1-20); assigning, via a first processor of a group of processors sharing said memory (Andrew: column 6, lines 40-55), at least one independent element per processor to be decoded by the processors in parallel (Andrew: column 7, lines 37-52); and decoding the independent elements of the video in parallel (Andrew: column

7, lines 30-36), as in claim 1. However, even though Andrew discloses that the decoder is an MPEG decoder processing (Andrew: column 10, lines 10-23) which one of ordinary skill in the art would associate with having a slice layer as in the claims, it fails to disclose parallel processing the bitstream according in independent units corresponding to slices, although it suggests that other sequences are employable other than the disclosed horizontal row processing (Andrew: column 7, lines 65-68). Akiwumi-Assani discloses a method and apparatus for MPEG digital video decoding (Andrew: column 5, lines 1-10) in parallel processing where the decoding occurs on a slice level (Akiwumi-Assani: column 2, lines 40-60; column 5, lines 20-40) in order to efficiently decode coded video (Akiwumi-Assani: column 4, lines 30-45). Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate Akiwumi-Assani slice parsing into the Andrew decoding method in order to efficiently process the compressed video. The Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, has all of the features of claim 1.

Regarding claims 3-5, the Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, discloses assigning the independent elements a varying number of slices to individual processors (Andrew: column 7, lines 58-62), as in the claims.

Regarding claim 6, the Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, discloses that the slice includes at least one macroblock (Akiwumi-Assani: column 4, lines 30-35), as in the claim.

Regarding claim 7, the Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, discloses decoding in accordance with MPEG (Andrew: column 5, lines 20-25), as in the claim.

Regarding claim 8, the Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, discloses "real-time" decoding (Andrew: column 6, lines 33-37), as in the claim.

Andrew discloses a computer readable medium (Andrew: column 25-35) having stored thereon a set of instructions (Andrew: column 6, lines 32-35), said set of instructions for decoding compressed video (Andrew: column 5, lines 10-15), which when executed by a processor (Andrew: column 6, lines 65-68), cause said processor to perform a method comprising the steps of, comprising: reading a stream of compressed video into a memory (Andrew: column 6, lines 54-66), said video having multiple pictures, each picture having one or more independent elements (Andrew: column (Andrew: column 8, lines 1-20); assigning, via a first processor of a group of processors sharing said memory (Andrew: column 6, lines 40-55), at least one independent element per processor to be decoded by the processors in parallel (Andrew: column 7, lines 37-52); and decoding the independent elements of the video in parallel (Andrew: column 7, lines 30-36), as in claim 9. However, even though Andrew discloses that the decoder is an MPEG decoder (Andrew: column 10, lines 10-23) which one of ordinary skill in the art would associate with having a slice layer as in the claims, it fails to disclose parallel processing the bitstream according in independent units corresponding to slices, although it suggests that other sequences are employable other than the disclosed horizontal row processing (Andrew: column 7, lines 65-68). Akiwumi-Assani discloses a method and apparatus for MPEG digital video decoding (Andrew: column 5, lines 1-10) in parallel processing where the decoding occurs on a slice level (Akiwumi-Assani: column 2, lines 40-60; column 5, lines 20-40) in order to efficiently decode coded video (Akiwumi-Assani: column 4, lines 30-45). Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate

Akiwumi-Assani slice parsing into the Andrew computer implemented decoding method in order to efficiently process the compressed video. The Andrew computer implemented decoding method, now incorporating Akiwumi-Assani's slice parser, has all of the features of claim 9.

Regarding claims 11-13, the Andrew computer implemented decoding method, now incorporating Akiwumi-Assani's slice parser, has discloses that assigning the independent elements a varying number of slices to individual processors (Andrew: column 7, lines 58-62), as in the claims.

Regarding claim 14, Andrew discloses that the slice includes at least one macroblock (Akiwumi-Assani: column 4, lines 30-35), as in the claim.

Regarding claim 15, Andrew discloses decoding in accordance with MPEG (Andrew: column 5, lines 20-25), as in the claim.

Regarding claim 16, Andrew discloses "real-time" decoding (Andrew: column 6, lines 33-37), as in the claim.

Andrew discloses a computer system, comprising: a plurality of processors (Andrew: column 6, lines 42-45); a memory coupled to said plurality of said processors (Andrew: column 6, lines 55-60); a first unit of logic to read a stream of compressed video into a memory (Andrew: column 6, lines 54-66), said video having multiple pictures , each picture having one or more independent elements (Andrew: column (Andrew: column 8, lines 1-20); and said first unit of logic further assigns, via a first processor of a group of processors sharing said memory (Andrew: column 6, lines 40-55), at least one independent element per processor to be decoded by the processors in parallel (Andrew: column 7, lines 37-52); and decoding the independent elements of the video in parallel (Andrew: column 7, lines 30-36), as in claim 17.

However, even though Andrew discloses that the decoder is an MPEG decoder (Andrew: column 10, lines 10-23) which one of ordinary skill in the art would associate with having a slice layer as in the claims, it fails to disclose parallel processing the bitstream according in independent units corresponding to slices, although it suggests that other sequences are employable other than the disclosed the horizontal row processing (Andrew: column 7, lines 65-68). Akiwumi-Assani discloses a method and apparatus for MPEG digital video decoding (Andrew: column 5, lines 1-10) in parallel processing where the decoding occurs on a slice level (Akiwumi-Assani: column 2, lines 40-60; column 5, lines 20-40) in order to efficiently decode coded video (Akiwumi-Assani: column 4, lines 30-45). Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate Akiwumi-Assani slice parsing into the Andrew computer implemented decoding method in order to efficiently process the compressed video. The Andrew computer implemented decoding system, now incorporating Akiwumi-Assani's slice parser, has all of the features of claim 17.

Regarding claims 19-21, the Andrew computer implemented decoding system, now incorporating Akiwumi-Assani's slice parser, has assigning the independent elements a varying number of slices to individual processors (Andrew: column 7, lines 58-62), as in the claims.

Regarding claim 22, Andrew discloses that the slice includes at least one macroblock (Akiwumi-Assani: column 4, lines 30-35), as in the claim.

Regarding claim 23, Andrew discloses decoding in accordance with MPEG (Andrew: column 5, lines 20-25), as in the claim.

Regarding claim 24, Andrew discloses "real-time" decoding (Andrew: column 6, lines 33-37), as in the claim.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (703)-305-4813. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S. Kelley can be reached on (703)-305-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-6606 for regular communications and (703)-308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-4700.

Application/Control Number: 09/470,299
Art Unit: 2613

Page 8

Andy S. Rao
Primary Examiner
Art Unit 2613

ANDY RAO
PRIMARY EXAMINER

asr
April 25, 2002